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THE PREPARATION OF A VACCINE FROM FLEAS INFECTED WITH ENDEMIC TYPHUS

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Ricketts (1), in 1909, succeeded in protecting guinea pigs against Rocky Mountain spotted fever by injecting the tissues and eggs of infected ticks after the material had been sterilized either by desiccation or by chloroform. In 1924, Breinl (2) immunized rabbits against typhus by inoculating them with a phenolized emulsion of intestines from typhus-infected lice, and Spencer and Parker (3), in 1924 and 1925, prepared a vaccine against Rocky Mountain spotted fever by phenolizing emulsions of infected ticks. The latter authors found that this vaccine would protect guinea pigs and monkeys against subsequent inoculations of virus, and also that blood serum from a vaccinated man contained virus-neutralizing qualities.

Zinsser and Batchelder (4), in 1930, and Zinsser and Castaneda (5), in 1931, protected guinea pigs against typhus with a vaccine prepared by formalinizing tunica material from typhus-infected guinea pigs. Kemp (6), in 1932, with vaccine prepared according to Zinsser's method, concluded that the immunity produced was not lasting and that the vaccine retained its potency for a short time only.

Following the method outlined by Spencer and Parker in preparing their vaccine against Rocky Mountain spotted fever, we have attempted to prepare a vaccine against typhus, using typhus-infected fleas as a source of virus.

The species of fleas used in these experiments was the rat flea *Xenopsylla cheopis*. Fleas of this species, after feeding on white rats infected with endemic typhus, were collected and emulsified in salt solution. The potency of the flea virus in the emulsion was then titrated by inoculating guinea pigs with graduated dilutions of the emulsion of fleas. The results of this titration showed that less than 1.7 fleas did not contain enough virus to infect a guinea pig. Four-tenths per cent phenol was added to the original emulsion, and the mixture was allowed to stand for five days. After centrifugation, the supernatant fluid was used to inoculate 24 guinea pigs, each animal receiving 1 c c. Twelve of these guinea pigs were given an

additional 0.5 c c each, one week later. At the end of three weeks these vaccinated animals were tested for immunity to endemic typhus. Of the guinea pigs receiving one dose of vaccine, 3 had died. Of the remaining 9, 7 were not immune, 1 showed a febrile reaction but no scrotal lesions, and 1 failed to show any reaction to the test inoculation. Of the 12 guinea pigs receiving two doses of vaccine, 1 died, 9 were found nonimmune, and 2 showed febrile reactions but no scrotal involvement. All controls reacted with typical febrile and scrotal reactions.

Since the virus used in the preparation of the vaccine in the foregoing experiment was rather weak, a second vaccine was made from a freshly infected lot of fleas. Titration of the emulsion of the infected fleas, used in preparing this second lot of vaccine, showed that there was sufficient virus in one-fiftieth of a flea to infect a guinea pig. The vaccine was prepared so that each cubic centimeter represented the virus from 20 fleas. Forty-four guinea pigs each received 1 c c of this vaccine. To determine the absence of live virus in the vaccine, 5 of the vaccinated animals were killed at the end of 10 days and emulsions of their spleens were injected into other guinea pigs. None of these latter animals developed signs of typhus nor were those tested found immune to subsequent inoculation of typhus virus. Of the remaining 39 guinea pigs, 15 died before being tested for immunity.

Eight of the vaccinated guinea pigs were tested for immunity to endemic typhus between two and three weeks after vaccination. Six of these animals were found to be nonimmune, 1 developed scrotal lesions only, and 1 showed fever on one day with a questionable scrotal reaction. The remaining 16 vaccinated guinea pigs were tested for immunity to endemic typhus between two and three months after vaccination. Three of these were definitely not immune; 3 developed fever for one or two days without scrotal involvement, 1 had fever one day with questionable scrotal involvement, 1 showed scrotal involvement for one day with no fever, while 8 developed no evidence of endemic typhus. For the test inoculations the vaccinated guinea pigs were divided into groups of two to six guinea pigs. In two of the groups tested, 6 of a total of 8 vaccinated guinea pigs failed to react to the immunity test, while all 6 controls reacted with fever and scrotal involvement. In testing the immunity of a third group, one of two guinea pigs used as controls for two vaccinated animals failed to develop scrotal involvement. Neither of the two vaccinated animals inoculated with this same virus showed any sign of endemic typhus.

In the first experiment reported, there was no protection following vaccination, while in the second experiment apparently there was protection against a subsequent inoculation of endemic typhus virus given two to three months after vaccination. As neither of these

vaccines was prepared from fleas containing a highly potent virus, it seems reasonable to hope that a vaccine prepared from a virus as potent as that recently reported by us (7), in which one one hundred and twenty-eight thousandths of a flea contained enough virus to infect a guinea pig, should afford a higher degree of protection.

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SOME INSTANCES OF RAPID RAT INFESTATION OF VESSELS

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While searching the literature several years ago in order to locate references to the occurrence of rat fleas on ships, the writer read an article by Fromme (1), reporting the discovery of rat fleas on ships at Hamburg, in which the attention was forcibly called to the fact that fleas were found on only 4 ships from Rosario, Argentina, 2 from India, and 1 from Smyrna out of a total of 51 vessels investigated.

On the other 44 vessels 431 rats were secured—very nearly 10 rats per ship. On the ship from Smyrna 5 rats were killed, on the two from India 60 were secured, while on the four from Rosario 202 were taken—an average on these latter of slightly over 50 rats per ship. On one of the ships from Rosario six plague-infected rats were found.

Fromme's paper was encountered shortly after reading Norman White's *Review of Plague in the Far East* (2), in which that writer emphatically states that the overseas transfer of plague is inseparably bound up with the grain trade. Rosario, of course, is one of the great grain ports of the world.

A study of the fumigation histories of individual vessels that have been kept for a number of years at the New York Quarantine Station has disclosed a number of instances of apparently very sudden heavy infestations on ships. Upon closer investigation, in one or two instances it was possible definitely to connect this sudden influx of rats with the taking aboard of a single cargo.

During the calendar year 1927 six plague-infected ships arrived at European ports, and one such ship arrived at a South American port, from Rosario. All of these vessels carried grain, and all of them were heavily rat infested. The exact records are not available, but it is known that on one more than 270 rats were recovered and on another well over 200.

When the finger so persistently points at one port, it naturally follows that that port is singled out for particular quarantine treatment and is consequently constantly before the attention of quarantine officers. It was to be expected, therefore, that additional instances of unusual rat infestation, apparently associated with Rosario, would be noted whenever they occurred. The following histories are taken from the New York quarantine records:

Steamship *Ch*—: Fumigated August 29, 1929; 43 rats. Carried grain from Rosario to England; proceeded thence to Russia and from there to New York.

Steamship *A*—: Fumigated August 12, 1929; 78 rats. Carried grain from Rosario to Bahia; proceeded thence to Barbados and from there to New York.

Steamship *C*—*B*—: Fumigated December 17, 1929; 78 rats. Carried grain from Rosario to European ports; proceeded thence to Archangel and from there to New York.

Steamship *Eu*—: Fumigated March 1, 1930; 72 rats. Carried grain from Rosario to European ports; proceeded thence to New York.

Steamship *E*—: Fumigated April 20, 1929; 109 rats. Carried grain from Rosario to European ports and then proceeded to New York.

Steamship *Ph*—: Fumigated at New York in August, 1929; no rats. Proceeded to Rosario and carried grain from there to Bahia. Loaded with coffee at Santos and proceeded to New York, where fumigation yielded 35 rats.

Steamship *Ra*—: Fumigated February 10, 1929; 135 rats. This ship had been engaged in the grain trade between Rosario and Europe, but on this occasion it loaded linseed at Rosario and proceeded to New York.

Steamship *Mi*—: Fumigated February 20, 1930; 170 rats. This ship had been fumigated at New York about 14 months previously, with the recovery of no rats. It proceeded to South America, where it was engaged during the interim in grain trade between Rosario and other South American ports, finally picking up a general cargo for New York.

Steamship *St*—: Fumigated June 17, 1929; 105 rats. This ship had been engaged in the grain trade between Rosario and Europe, but on this trip brought linseed from Rosario to New York.

Motor ship *Ti*—: Fumigated August 28, 1928; 206 rats. Carried grain from Rosario to north European ports; proceeded thence to New York in ballast.

Motor ship *T*—: This ship was engaged in the grain trade from Rosario to north Europe. After one of these trips it proceeded in ballast to New York, where fumigation yielded 104 rats. It then proceeded to Rosario, took grain to Rotterdam, and returned in ballast to New York, where fumigation, October 12, 1929, yielded 69 rats. Following this, several trips were made between New York and South American ports, including Rosario, but carrying linseed. None of six fumigations at New York yielded over 28 rats until the vessel made one trip with grain to Europe and then proceeded in ballast to New York, where fumigation, July 27, 1931, yielded 109 rats.

Steamship Tin—: Fumigated December 20, 1928; 134 rats. This ship had been engaged in the grain trade from Rosario to Europe, but on this trip brought linseed and coffee to New York. It returned to South America, making one or two coastwise trips carrying grain, then proceeded with coffee to New York where, on June 27, 1929, fumigation yielded 91 rats.

Steamship Tr—: Fumigated March 24, 1929; 127 rats. This ship had carried grain from Rosario to Europe, but on this trip carried linseed to New York.

Steamship Tre—: Fumigated October 17, 1929; 129 rats. This ship had carried grain from Rosario to Europe, but on this trip carried linseed to American ports, being remanded to New York. It returned to South America and loaded linseed for New York, where fumigation, February 20, 1930, yielded no rats.

Steamship Ar—: Fumigated February 26, 1929; 69 rats. This ship had been engaged in the grain trade between Rosario and northern Europe. It was of special interest, because there was very little permanent rat harborage in the holds and numbers of rat nests were found between pieces of cargo. The vessel returned to South America and on the following trip carried grain from Rosario to other South American ports, then picked up a general cargo for New York. Fumigation at New York on November 6, 1929, yielded 36 rats. Next trip the ship did not visit Rosario, but returned with coffee from Santos. Fumigation February 18, 1930, yielded 1 rat.

Steamship Bi—: Fumigated May 17, 1929; 116 rats. This ship had been engaged in grain trade between Rosario and Europe, but on this occasion brought coffee and other cargo to New York.

Steamship Co—: Fumigated September 20, 1929; 129 rats. This ship carried grain from Rosario to England, then proceeded to Archangel and loaded lumber for New York.

Steamship Col—: Fumigated November 18, 1928; 119 rats. This ship also carried grain from Rosario to British ports, proceeded thence to Archangel and loaded lumber for New York.

Motor ship Ta—: Fumigated August 3, 1929; 41 rats. Carried grain from Rosario to Rotterdam, and proceeded from there to New York in ballast.

Quite recently, there occurred a most illuminating instance of infestation in the case of the motor ship *Ta*—. This ship was fumigated at New York, October 3, 1928, and yielded 34 rats. It then proceeded to South America, took grain at Rosario and carried it to Mediterranean ports, where a general cargo was loaded and carried to New York. Fumigation at New York, February 11, 1929, yielded 143 rats. Between then and June 3, 1931, the vessel was engaged in trade between New York and South American ports, carrying cargoes other than grain; it was fumigated five times at New York during this period and yielded 42, 7, 2, 13, and 8 rats, respectively. An inspection on August 31, 1931, showed an estimated presence of 15 rats. Following this inspection the ship proceeded to South America and at Rosario loaded grain, which was carried to Scandinavian ports. Thence the ship proceeded to Boston and other American ports, reaching New Orleans February 10, 1932, when fumigation yielded 144 rats.

CONTRASTING NONRAT-FOOD CARGOES

The records at New York furnish an excellent example of how the rat infestation may be primarily affected by the cargo taken on at the same port of call. There is a considerable and rather constant linseed importation into New York from Rosario. A number of ships are engaged more or less exclusively in this trade, making regular runs from New York to ports on the east coast of South America, finally loading linseed at Rosario and bringing it directly, or almost directly, to New York. These ships, once freed of rats, do not acquire large colonies thereafter, but in many cases will remain quite rat free, sometimes for three or four voyages in this trade, and in some instances on record for periods of three or four years. Furthermore, reference to the specific instances cited herein will show cases of vessels retaining only a moderate rat infestation while carrying linseed between Rosario and New York, but suddenly picking up a large colony of rats when shifted to a grain-carrying run from Rosario to Europe. In all of the instances cited, wherein heavy rat infestation was found on a vessel bringing linseed from Rosario to New York, the previous history showed either that fumigation had not been carried out for a considerable period, during which the vessel was engaged in some other trade, or that the vessel had been carrying grain from Rosario on one or more trips prior to picking up the linseed cargo for New York.

ASSOCIATION WITH HARBORAGE

While it is true that on some of the ships listed herein extensive rat harborage existed, on others it was limited, and on at least three it was so limited that it was insufficient for the numbers of rats. On these three vessels the rat colony had utilized the cargo as harborage and had built nests between pieces of cargo and in the corners of the deck that at the time were covered with cargo. In the latest instance cited, the ship was in process of rat proofing, but this had not been completed in the most heavily infested hold, where the rats had made their way into cold-storage insulation.

QUARANTINE APPLICATION

The point to be noted in regard to these instances of the rapid building up of rat colonies, apparently associated with the loading of rat-food cargoes at certain ports and quite definitely associated in a very considerable number of cases with the loading of such cargoes at one particular port, is that such occurrences may entirely negate previous rat eradication accomplished either by fumigation or by rat

proofing. While it has not occurred in our experience, these circumstances suggest that a completely rat-proof vessel might go to Rosario and in loading grain temporarily acquire a colony of a hundred rats or more, which rats, if no immediate destructive measures were carried out, might remain on the vessel for a considerable period, possibly until eliminated by fumigation or disembarkation at subsequent ports of call.

While experience at New York has been that a predominant proportion of these instances has been associated with the carriage of grain from Rosario to Europe, it is nevertheless true that the same occurs sometimes on ships on other routes. Instances observed at New York have been associated with the loading of native cargoes at West African ports, with the loading of rice, tapioca, and similar food cargoes at Far Eastern ports, with the loading of rat-food cargoes at the east coast ports of South America, and with the loading of rat-food cargoes at Mediterranean ports.

While large rat colonies have been observed on ships on other runs and carrying other cargoes, the circumstance of rapid infestation has not usually appeared; in such cases the large colony nearly always was definitely bound up with the presence of extensive harborage and the history was generally one of persistent rat-infestation over a period of years.

INFESTATION INSPECTION

Fortunately, these heavy infestations can always be rapidly diagnosed, even by a relatively superficial infestation inspection. In all the cases cited herein, signs of rats were plentiful and obvious, both in the case of the ships arriving empty and in the case of those arriving loaded. If inspections are carried out on all vessels with a recent history suggesting the possibility of rapid influx of infestation, appreciable errors should not occur.

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COURT DECISION RELATING TO PUBLIC HEALTH

Recovery of damages for nuisance caused by operation of sewage disposal plant.—(Kentucky Court of Appeals; *City of Harrodsburg v. Brewer et al., Same v. Frost, Same v. Sallee*, 48 S. W. (2d) 817; de-

cided Mar. 4, 1932.) The city of Harrodsburg constructed and began operating a sewage disposal plant. Several months after such plant had been in operation, a number of persons who owned homes located near the plant brought actions against the city to recover damages because of a nuisance created by the plant's operation. The plaintiffs claimed that the atmosphere became polluted with foul odors to such an extent as to render their premises almost uninhabitable at times. The plaintiffs prevailed in the trial court and, on the theory that the cause of the injury to their premises was permanent, the measure of damages awarded was the difference between the market value of the property immediately before the installation of the disposal plant and the reasonable market value of the property under the circumstances at the time of trial. The court of appeals pointed out that the evidence was to the effect that the disposal plant was of the latest type and that the odors would disappear when a correct knowledge of how to operate the plant was acquired. In view of the fact that the cause of the injury to plaintiffs' premises was the improper use of a properly constructed plant, the appellate court held that the trial court erred in permitting recovery for a permanent structure and that the damages should have been confined to decreased rental value and impairment of use and occupation by the owners who occupied their premises. It was the court's conclusion that the city should have the right sufficiently to experiment with the operation of the plant so as to determine whether it could or could not be operated in a manner unproductive of any nuisance to near-by inhabitants, and should be given the opportunity, after such sufficient time, to abandon the use of the plant before being charged with the duty of responding in damages as from a permanent cause.

DEATHS DURING WEEK ENDING MAY 28, 1932

Summary of information received by telegraph from industrial insurance companies for the week ended May 28, 1932, and corresponding week of 1931. (From the Weekly Health Index, issued by the Bureau of the Census, Department of Commerce)

	Week ended May 28, 1932	Corresponding week, 1931
Policies in force.....	73, 000, 630	75, 152, 855
Number of death claims.....	13, 176	13, 756
Death claims per 1,000 policies in force, annual rate..	9. 4	9. 5
Death claims per 1,000 policies, first 21 weeks of year, annual rate.....	10. 4	10. 8

Deaths¹ from all causes in certain large cities of the United States during the week ended May 28, 1932, infant mortality, annual death rate, and comparison with corresponding week of 1931. (From the Weekly Health Index, issued by the Bureau of the Census, Department of Commerce)

[The rates published in this summary are based upon mid-year population estimates derived from the 1930 census]

City	Week ended May 28, 1932				Corresponding week, 1931		Death rate ² for the first 21 weeks	
	Total deaths	Death rate ¹	Deaths under 1 year	Infant mortality rate ¹	Death rate ¹	Deaths under 1 year	1932	1931
Total (85 cities).....	7,832	11.2	651	4.52	11.2	624	12.3	13.3
Akron.....	34	6.7	6	75	6.7	5	7.7	8.3
Albany.....	40	16.0	1	20	17.0	4	14.9	15.4
Atlanta.....	70	12.9	7	68	18.2	5	14.0	16.1
White.....	34	9.5	5	74	14.7	4	11.0	12.8
Colored.....	36	19.7	2	57	25.2	1	10.9	22.5
Baltimore.....	199	12.7	16	87	12.8	8	14.4	16.3
White.....	162	12.6	14	64	11.3	2	13.4	14.9
Colored.....	37	12.9	2	32	19.5	6	10.0	22.8
Birmingham.....	50	9.4	6	63	14.1	7	12.0	14.9
White.....	18	6.5	2	33	11.3	4	9.6	11.6
Colored.....	32	15.9	4	108	18.8	3	16.0	20.4
Boston.....	237	15.7	26	79	12.2	11	15.5	15.8
Bridgeport.....	35	13.5	2	36	10.3	2	11.7	12.3
Buffalo.....	155	13.8	12	58	11.3	12	13.9	14.6
Cambridge.....	22	10.0	5	104	10.5	0	14.1	13.8
Camden.....	89	17.1	7	123	10.1	3	16.1	16.4
Canton.....	27	13.0	1	25	10.3	2	10.2	11.3
Chicago.....	644	9.6	40	39	10.3	39	10.7	11.6
Cincinnati.....	115	13.0	10	64	14.3	14	16.1	17.3
Cleveland.....	187	10.6	14	45	9.9	15	12.0	12.2
Columbus.....	83	14.5	2	20	14.5	4	14.6	15.1
Dallas.....	50	9.3	6	-----	9.4	9	10.9	12.3
White.....	34	7.6	5	-----	7.9	7	9.9	10.9
Colored.....	16	17.2	1	-----	16.5	2	15.4	19.0
Dayton.....	60	15.1	5	72	15.3	6	13.3	13.3
Denver.....	88	15.6	7	69	12.7	6	15.6	15.1
Des Moines.....	25	8.9	3	51	10.5	5	12.4	11.8
Detroit.....	263	8.0	21	38	7.9	30	8.4	9.4
Duluth.....	21	10.8	1	29	10.2	0	11.0	11.4
El Paso.....	32	15.6	12	-----	13.9	6	14.4	17.0
Erie.....	31	13.6	1	21	8.4	4	12.4	11.6
Evansville.....	23	11.3	2	67	12.5	1	10.1	11.9
Fall River.....	22	10.0	2	53	18.5	5	13.0	13.7
Flint.....	20	6.1	4	59	8.3	2	8.4	8.0
Fort Wayne.....	27	11.6	3	77	11.0	2	10.8	11.6
Fort Worth.....	27	8.3	6	-----	9.3	4	10.4	12.3
White.....	22	8.0	5	-----	9.3	4	13.0	11.7
Colored.....	5	9.8	1	-----	9.6	0	12.4	15.0
Grand Rapids.....	23	6.9	3	51	10.0	3	9.5	9.7
Hartford.....	38	11.7	0	0	-----	-----	-----	-----
Houston.....	66	10.6	7	-----	11.6	7	11.1	11.5
White.....	39	8.5	4	-----	9.2	5	10.3	10.6
Colored.....	27	16.5	3	-----	18.2	2	13.3	14.1
Indianapolis.....	112	15.6	13	105	11.7	6	13.7	14.7
White.....	97	15.4	9	83	11.7	6	13.3	14.3
Colored.....	15	17.0	4	274	11.5	0	16.6	17.9
Jersey City.....	77	12.5	11	91	9.6	9	12.1	13.0
Kansas City, Kans.....	35	14.8	7	155	13.6	2	13.1	14.6
White.....	28	14.6	5	134	11.0	1	12.8	13.5
Colored.....	7	15.4	2	256	24.4	1	14.4	19.1
Kansas City, Mo.....	95	11.9	8	90	11.2	13	12.8	14.6
Knoxville.....	21	9.8	7	177	9.5	2	12.8	13.0
White.....	18	8.9	7	195	8.6	2	11.6	13.0
Colored.....	5	14.3	0	0	14.6	0	18.9	18.7
Long Beach.....	25	8.1	1	26	9.9	1	9.6	10.3
Los Angeles.....	293	11.1	14	42	10.8	25	11.2	11.4
Louisville.....	67	11.3	0	0	16.2	3	14.0	16.0
White.....	51	10.2	0	0	13.8	1	12.6	14.3
Colored.....	16	17.5	0	0	29.5	2	21.7	25.2
Lowell.....	35	18.3	4	105	10.9	4	14.8	13.6
Lynn.....	21	10.7	1	28	9.6	0	11.6	11.4
Memphis.....	68	13.5	7	76	16.3	7	16.6	17.4
White.....	33	10.6	4	68	13.7	1	13.0	14.2
Colored.....	35	18.2	3	90	20.6	6	22.5	22.5
Miami.....	16	7.3	1	28	8.8	1	12.2	13.5
White.....	13	7.7	1	39	6.6	0	11.2	12.5
Colored.....	3	6.2	0	0	16.5	1	15.5	16.5

See footnotes at end of table.

Deaths from all causes in certain large cities of the United States during the week ended May 28, 1932, infant mortality, annual death rate, and comparison with corresponding week of 1931. (From the Weekly Health Index, issued by the Bureau of the Census, Department of Commerce)—Continued

City	Week ended May 28, 1932				Corresponding week, 1931		Death rate ¹ for the first 21 weeks	
	Total deaths	Death rate ²	Deaths under 1 year	Infant mortality rate ³	Death rate ²	Deaths under 1 year	1932	1931
Milwaukee.....	90	7.8	5	24	9.4	14	9.5	10.3
Minneapolis.....	77	8.4	7	46	9.6	4	11.1	11.9
Nashville ⁴	46	15.3	2	30	15.8	8	15.2	17.7
White.....	25	11.5	2	39	12.5	2	13.9	15.3
Colored.....	21	25.6	0	0	24.4	6	18.7	23.9
New Bedford ⁵	27	12.5	2	58	9.3	0	12.8	13.6
New Haven.....	36	11.6	2	40	12.5	5	13.3	13.2
New Orleans ⁴	134	14.8	14	80	14.2	7	15.6	18.1
White.....	80	12.4	7	61	13.0	2	13.2	14.8
Colored.....	54	20.5	7	114	17.0	5	21.3	26.2
New York.....	1,453	10.5	132	59	10.6	126	11.7	12.8
Bronx Borough.....	205	7.8	14	40	7.5	14	8.7	9.3
Brooklyn Borough.....	451	8.8	45	50	9.1	51	10.9	11.8
Manhattan Borough.....	570	16.8	53	76	17.0	49	18.0	19.6
Queens Borough.....	166	7.2	10	42	6.6	10	7.5	8.2
Richmond Borough.....	61	19.0	10	197	15.6	2	14.8	14.8
Newark, N. J.....	80	9.3	4	22	9.7	9	11.7	13.1
Oakland.....	65	11.4	4	50	9.5	8	11.1	11.2
Oklahoma City.....	44	11.2	2	27	9.3	1	10.7	12.3
Omaha.....	35	8.4	3	34	10.7	0	14.2	14.6
Paterson.....	34	12.8	1	54	10.5	1	13.6	15.3
Peoria.....	24	11.3	1	28	13.0	4	12.0	13.4
Philadelphia.....	448	11.8	31	48	11.8	45	13.7	15.3
Pittsburgh.....	160	12.3	18	82	11.0	11	14.3	16.8
Portland, Oreg.....	57	9.6	2	26	11.9	4	12.0	12.8
Providence.....	55	11.2	3	29	12.7	1	14.9	14.7
Richmond ⁴	34	9.6	3	45	13.3	8	14.8	17.2
White.....	20	7.9	2	45	8.7	1	12.1	14.7
Colored.....	14	13.9	1	46	24.6	2	20.6	23.6
Rochester.....	69	10.8	2	19	9.9	6	13.0	13.4
St. Louis.....	213	13.4	10	56	12.1	6	14.6	16.9
St. Paul.....	34	6.4	0	0	10.4	1	11.1	11.5
Salt Lake City ⁴	29	10.4	2	31	14.6	3	11.3	13.0
San Antonio.....	71	15.0	22	18.0	18.0	22	14.5	16.2
San Diego.....	37	11.8	5	108	16.3	0	15.4	14.9
San Francisco.....	175	13.8	9	62	10.1	0	13.3	13.8
Schenectady.....	18	9.8	1	29	7.6	0	11.8	11.6
Seattle.....	74	10.3	2	20	11.5	3	12.4	12.5
Somerville.....	17	8.4	0	0	9.4	1	10.0	11.0
South Bend.....	14	6.6	1	29	8.2	0	8.0	8.9
Spokane.....	27	12.1	1	27	15.2	2	12.4	12.9
Springfield, Mass.....	35	11.9	4	67	11.3	0	11.9	13.7
Syracuse.....	47	11.4	3	39	12.6	4	12.7	12.6
Tacoma.....	33	15.9	1	28	12.1	1	12.9	13.7
Tampa ⁴	18	8.7	1	29	9.9	2	12.4	12.9
White.....	13	8.0	0	0	10.1	2	11.9	11.8
Colored.....	5	11.5	1	158	9.4	0	14.5	16.8
Toledo.....	68	11.8	5	54	10.5	7	12.4	12.9
Trenton.....	38	16.0	3	59	19.4	2	17.4	19.0
Utica.....	22	11.2	3	85	13.8	2	16.9	15.8
Washington, D. C. ⁴	156	16.5	14	79	14.5	8	17.5	17.6
White.....	105	15.4	8	66	12.2	4	15.6	15.0
Colored.....	51	19.5	6	107	20.9	4	22.3	24.4
Waterbury.....	11	5.7	0	0	6.7	1	9.9	10.7
Wilmington, Del. ⁷	34	16.7	2	45	10.3	0	16.9	16.0
Worcester.....	41	10.8	5	70	11.4	5	13.5	14.4
Yonkers.....	29	10.7	0	0	6.8	0	8.6	9.6
Youngstown.....	40	11.9	5	81	6.9	2	10.8	11.1

¹ Deaths of nonresidents are included. Stillbirths are excluded.

² These rates represent annual rates per 1,000 population, as estimated for 1932 and 1931 by the arithmetical method.

³ Deaths under 1 year of age per 1,000 estimated live births. Cities left blank are not in the registration area for births.

⁴ Data for 81 cities.

⁵ Deaths for week ended Friday.

⁶ For the cities for which deaths are shown by color, the percentages of colored population in 1930 were as follows: Atlanta, 33; Baltimore, 18; Birmingham, 38; Dallas, 17; Fort Worth, 16; Houston, 27; Indianapolis, 12; Kansas City, Kans., 19; Knoxville, 16; Louisville, 15; Memphis, 38; Miami, 23; Nashville, 28; New Orleans, 29; Richmond, 20; Tampa, 21; and Washington, D. C., 37.

⁷ Population Apr. 1, 1930; decreased 1920 to 1930, no estimate made.

⁸ Figures for Hartford not shown in totals.

PREVALENCE OF DISEASE

No health department, State or local, can effectively prevent or control disease without knowledge of when, where, and under what conditions cases are occurring

UNITED STATES

CURRENT WEEKLY STATE REPORTS

These reports are preliminary, and the figures are subject to change when later returns are received by the State health officers

Reports for Weeks Ended June 4, 1932, and June 6, 1931

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended June 4, 1932, and June 6, 1931

Division and State	Diphtheria		Influenza		Measles		Meningococcus meningitis	
	Week ended June 4, 1932	Week ended June 6, 1931	Week ended June 4, 1932	Week ended June 6, 1931	Week ended June 4, 1932	Week ended June 6, 1931	Week ended June 4, 1932	Week ended June 6, 1931
New England States:								
Maine	1	4	4	3	104	34	0	0
New Hampshire	1	1			35	58	1	1
Vermont	1	1			358	1	0	0
Massachusetts	38	50	2	2	1,009	645	2	4
Rhode Island	4	9			32	111	0	0
Connecticut	3	6	2	1	221	391	0	1
Middle Atlantic States:								
New York	91	159	10	18	2,150	3,174	6	11
New Jersey	25	37	7	20	769	943	1	3
Pennsylvania	63	76			1,629	2,874	14	9
East North Central States:								
Ohio	31	17	4	14	2,528	857	5	0
Indiana	15	18	14		125	521	6	2
Illinois	51	124	68	5	1,083	1,970	8	16
Michigan	18	29	6	4	2,691	401	3	5
Wisconsin	5	18	30	17	1,670	788	0	1
West North Central States:								
Minnesota	4	12	3		88	240	1	4
Iowa	9	6			3	62	0	0
Missouri	23	21	2	2	61	238	7	4
North Dakota	3	2			20	65	1	1
South Dakota	4	2		1	13	17	0	1
Nebraska	8	9			7	2	0	2
Kansas	6	6	1	1	75	131	1	1
South Atlantic States:								
Delaware	1					89	0	0
Maryland	5	18	3	2	33	740	1	3
District of Columbia	7	5			20	107	0	1
Virginia							1	
West Virginia	7	7	29	24	155	198	0	2
North Carolina	12	14	48	8	589	868	2	1
South Carolina	5	13	249	282	214	171	0	1
Georgia	4	3	30	35	35	111	1	0
Florida	4	1	1	4	6	161	0	1

See footnotes at end of table.

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended June 4, 1932, and June 6, 1931—Continued

Division and State	Diphtheria		Influenza		Measles		Meningococcus meningitis	
	Week ended June 4, 1932	Week ended June 6, 1931	Week ended June 4, 1932	Week ended June 6, 1931	Week ended June 4, 1932	Week ended June 6, 1931	Week ended June 4, 1932	Week ended June 6, 1931
East South Central States:								
Kentucky.....	6	8	17	—	32	181	0	2
Tennessee.....	1	5	31	17	5	366	3	1
Alabama ¹	0	8	32	14	8	104	3	0
Mississippi.....	4	6	—	—	—	—	0	5
West South Central States:								
Arkansas.....	—	2	13	11	—	53	0	0
Louisiana.....	20	18	6	12	5	8	1	1
Oklahoma ⁴	8	11	22	46	19	77	0	0
Texas.....	27	14	33	31	337	80	1	1
Mountain States:								
Montana.....	1	1	1	—	43	37	0	2
Idaho.....	—	3	—	—	—	4	0	0
Wyoming.....	—	5	—	—	55	3	1	0
Colorado.....	10	10	—	—	126	474	1	2
New Mexico.....	7	10	7	—	22	51	0	0
Arizona.....	2	—	6	2	1	38	0	1
Utah ⁵	—	1	—	1	2	4	0	1
Pacific States:								
Washington.....	8	4	—	—	183	132	1	0
Oregon.....	4	6	27	6	221	64	0	0
California.....	60	58	41	36	264	935	1	1
Total.....	618	837	729	609	16,946	18,588	73	92

Division and State	Polio-myelitis		Scarlet fever		Smallpox		Typhoid fever	
	Week ended June 4, 1932	Week ended June 6, 1931	Week ended June 4, 1932	Week ended June 6, 1931	Week ended June 4, 1932	Week ended June 6, 1931	Week ended June 4, 1932	Week ended June 6, 1931
New England States:								
Maine.....	0	0	7	38	0	0	2	0
New Hampshire.....	0	0	17	0	0	0	0	0
Vermont.....	0	0	15	3	4	4	0	0
Massachusetts.....	1	3	366	264	0	0	7	3
Rhode Island.....	0	0	45	34	0	0	0	0
Connecticut.....	2	1	76	37	0	0	1	2
Middle Atlantic States:								
New York.....	3	1	984	746	0	5	6	14
New Jersey.....	0	1	239	279	0	0	2	5
Pennsylvania.....	1	1	762	518	0	0	6	8
East North Central States:								
Ohio.....	3	0	328	308	23	17	8	9
Indiana.....	0	0	65	155	19	121	12	2
Illinois.....	1	0	319	473	7	29	7	8
Michigan.....	1	1	503	395	0	17	3	4
Wisconsin.....	0	0	64	104	3	6	0	0
West North Central States:								
Minnesota.....	0	0	69	58	5	11	1	3
Iowa.....	0	1	22	48	16	64	1	3
Missouri.....	0	1	29	150	4	51	0	8
North Dakota.....	0	0	1	19	1	16	1	1
South Dakota.....	0	0	3	8	1	19	3	0
Nebraska.....	0	0	15	31	16	30	0	0
Kansas.....	0	1	24	25	5	57	0	2
South Atlantic States:								
Delaware.....	0	0	9	9	0	0	1	0
Maryland ¹¹	1	0	60	51	0	0	7	6
District of Columbia.....	0	0	14	16	0	0	0	0
Virginia.....	2	—	—	—	—	—	—	—
West Virginia.....	0	1	17	19	3	7	5	5
North Carolina.....	2	0	35	15	1	4	9	17
South Carolina.....	2	1	7	0	0	7	20	10
Georgia ¹	0	1	3	41	0	0	19	19
Florida ¹	0	0	0	4	0	0	0	1

See footnotes at end of table.

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended June 4, 1932, and June 6, 1931—Continued

Division and State	Polio-myelitis		Scarlet fever		Smallpox		Typhoid fever	
	Week ended June 4, 1932	Week ended June 6, 1931	Week ended June 4, 1932	Week ended June 6, 1931	Week ended June 4, 1932	Week ended June 6, 1931	Week ended June 4, 1932	Week ended June 6, 1931
East South Central States:								
Kentucky.....	0	0	18	55	1	5	15	6
Tennessee.....	1	0	17	12	30	25	13	6
Alabama ¹	0	1	4	11	9	28	5	11
Mississippi.....	0	0	0	9	5	37	13	17
West South Central States:								
Arkansas.....	0	0	4	13	3	31	5	9
Louisiana.....	0	0	10	8	1	27	10	12
Oklahoma ⁴	0	0	8	15	23	87	7	3
Texas.....	1	0	30	28	48	79	3	10
Mountain States:								
Montana.....	0	0	7	25	3	0	4	3
Idaho.....	0	0	1	6	0	2	0	0
Wyoming.....	0	0	7	10	0	0	0	0
Colorado.....	0	0	16	20	1	22	2	4
New Mexico.....	0	0	11	5	2	0	3	0
Arizona.....	0	0	6	0	1	2	0	3
Utah ¹	0	2	2	2	0	0	0	0
Pacific States:								
Washington.....	0	0	26	26	10	21	6	3
Oregon.....	0	0	10	19	15	23	0	4
California.....	3	9	141	97	9	24	8	10
Total.....	24	26	4,421	4,207	278	878	215	242

¹ New York City only.

² Week ended Friday.

³ Typhus fever, week ended June 4, 1932, 15 cases: 1 case in Maryland, 5 cases in Georgia, 3 cases in Florida, and 6 cases in Alabama.

⁴ Figures for 1932 are exclusive of Oklahoma City and Tulsa and for 1931 are exclusive of Tulsa only.

SUMMARY OF MONTHLY REPORTS FROM STATES

The following summary of cases reported monthly by States is published weekly and covers only those States from which reports are received during the current week.

State	Menin- gococ- cus menin- gitis	Diph- theria	Influenza	Malaria	Measles	Pella- gra	Polio- myelitis	Scarlet fever	Small- pox	Ty- phoid fever
March, 1933										
Hawaii Territory.....	2	33	10		358			6		11
April, 1933										
California.....	12	322	292	3	2,449	3	9	688	50	35
Mississippi.....	3	29	3,328	1,614	79	504	0	36	104	18
May, 1933										
Nebraska.....	1	55			13		0	75	58	2
New Mexico.....		29	35	1	135		0	63	3	9
North Dakota.....	1	33	1		213		2	24	9	

March, 1933

Hawaii Territory:	Cases	Hawaii Territory—Contd.	Cases
Chicken pox.....	66	Impetigo contagiosa.....	1
Conjunctivitis, follicular.....	23	Leprosy.....	4
Dysentery, bacillary.....	2	Mumps.....	4
Erysipelas.....	4	Plague.....	1
Hookworm disease.....	73	Whooping cough.....	7

<i>April, 1932</i>			
	Cases		Cases
Actinomycosis:		Trachoma:	
California.....	2	California.....	21
Chicken pox:		Mississippi.....	2
California.....	3,722	Trichinosis:	
Mississippi.....	594	California.....	1
Dengue:		Tularaemia:	
California.....	1	Mississippi.....	1
Mississippi.....	2	Undulant fever:	
Dysentery:		California.....	10
California (amebic).....	10	Mississippi.....	1
California (bacillary).....	8	Whooping cough:	
Mississippi (amebic).....	38	California.....	1,637
Food poisoning:		Mississippi.....	763
California.....	24		
German measles:		<i>May, 1932</i>	
California.....	66	Chicken pox:	
Granuloma, coccidioides:		Nebraska.....	123
California.....	2	New Mexico.....	71
Hookworm disease:		North Dakota.....	110
California.....	1	Conjunctivitis:	
Jaundice:		New Mexico.....	2
California.....	4	Dysentery:	
Leprosy:		New Mexico.....	2
California.....	1	Food poisoning:	
Lethargic encephalitis:		New Mexico.....	6
California.....	4	German measles:	
Mumps:		New Mexico.....	2
California.....	583	Lethargic encephalitis:	
Mississippi.....	248	North Dakota.....	1
Ophthalmia neonatorum:		Mumps:	
California.....	2	Nebraska.....	99
Mississippi.....	7	New Mexico.....	32
Paratyphoid fever:		North Dakota.....	24
California.....	5	Paratyphoid fever:	
Psittacosis:		New Mexico.....	1
California.....	3	Puerperal septicaemia:	
Puerperal septicaemia:		New Mexico.....	2
Mississippi.....	32	Septic sore throat:	
Rabies in animals:		New Mexico.....	2
California.....	44	North Dakota.....	1
Mississippi.....	7	Trachoma:	
Septic sore throat:		North Dakota.....	4
California.....	4	Vincent's angina:	
Tetanus:		North Dakota.....	20
California.....	7	Whooping cough:	
		Nebraska.....	55
		New Mexico.....	41
		North Dakota.....	22

ADMISSIONS TO HOSPITALS FOR THE INSANE, NOVEMBER, 1930

Reports for the month of November, 1930, showing new admissions to hospitals for the care and treatment of the insane, were received by the Public Health Service from 116 hospitals, located in 37 States, the District of Columbia, and the Territory of Hawaii. The 116 hospitals had 177,665 patients on November 30, 1930, 94,485 males and 83,180 females, the ratio being 114 males per 100 females.

The following table gives the number of new admissions for the month of November, 1930, by psychoses:

Psychoses	Number of first admissions		
	Male	Female	Total
1. Traumatic psychoses.....	10	0	10
2. Senile psychoses.....	135	85	220
3. Psychoses with cerebral arteriosclerosis.....	181	84	265
4. General paralysis.....	170	50	220
5. Psychoses with cerebral syphilis.....	25	13	38
6. Psychoses with Huntington's chorea.....	3	0	3
7. Psychoses with brain tumor.....	2	0	2
8. Psychoses with other brain or nervous disease.....	22	11	33
9. Alcoholic psychoses.....	137	10	147
10. Psychoses due to drugs and other exogenous toxins.....	7	2	9
11. Psychoses with pellagra.....	4	17	21
12. Psychoses with other somatic diseases.....	26	34	60
13. Manic-depressive psychoses.....	185	247	432
14. Involution melancholia.....	15	37	52
15. Dementia praecox (schizophrenia).....	318	245	563
16. Paranoia and paranoid conditions.....	22	26	48
17. Epileptic psychoses.....	34	16	50
18. Psychoneuroses and neuroses.....	15	36	51
19. Psychoses with psychopathic personality.....	17	7	24
20. Psychoses with mental deficiency.....	64	27	91
21. Undiagnosed psychoses.....	89	58	147
22. Without psychosis.....	186	52	238
Total.....	1,677	1,057	2,734

During the month of November, 1930, there were 2,734 new admissions to the hospitals, 61.3 per cent of these new admissions being males and 38.7 per cent females. Three hundred and eighty-five of the new admissions were reported as being undiagnosed or "without psychosis." There were 2,349 new admissions for whom provisional diagnoses were made. Of these 2,349 patients, cases of dementia praecox constituted 24.0 per cent; manic-depressive psychoses, 18.4 per cent; psychoses with cerebral arteriosclerosis, 11.3 per cent; senile psychoses, 9.4 per cent; and general paralysis, 9.4 per cent. These five classes accounted for 1,700 cases, or 72.4 per cent of the new admissions for whom diagnoses were made.

The following table shows the number of patients in the hospitals and on parole on November 30, 1930:

	Male	Female	Total
Patients on books last day of month:			
In hospitals.....	85,805	75,737	161,542
On parole or otherwise absent, but still on books.....	8,680	7,443	16,123
Total.....	94,485	83,180	177,665

Of the 177,665 patients, 8,680 males and 7,443 females were on parole or otherwise absent but still on the books on November 30, 1930, 9.2 per cent of the males, 8.9 per cent of the females, and 9.1 per cent of the total number of patients.

GENERAL CURRENT SUMMARY AND WEEKLY REPORTS FROM CITIES

The 96 cities reporting cases used in the following table are situated in all parts of the country and have an estimated aggregate population of more than 33,960,000. The estimated population of the 89 cities reporting deaths is more than 32,405,000. The estimated expectancy is based on the experience of the last nine years, excluding epidemics.

Weeks ended May 28, 1932, and May 30, 1931

	1932	1931	Estimated expectancy
<i>Cases reported</i>			
Diphtheria:			
46 States.....	646	765	
96 cities.....	311	378	693
Measles:			
45 States.....	17,590	18,739	
96 cities.....	6,641	7,152	
Meningococcus meningitis:			
46 States.....	47	99	
96 cities.....	17	51	
Polio-myelitis:			
46 States.....	26	23	
Scarlet fever:			
46 States.....	4,713	4,571	
96 cities.....	2,579	1,953	1,299
Smallpox:			
46 States.....	232	752	
96 cities.....	31	99	53
Typhoid fever:			
46 States.....	237	208	
96 cities.....			
	49	44	39
<i>Deaths reported</i>			
Influenza and pneumonia:			
89 cities.....	565	656	
Smallpox:			
89 cities.....	0	0	

City reports for week ended May 28, 1932

The "estimated expectancy" given for diphtheria, poliomyelitis, scarlet fever, smallpox, and typhoid fever is the result of an attempt to ascertain from previous occurrence the number of cases of the disease under consideration that may be expected to occur during a certain week in the absence of epidemics. It is based on reports to the Public Health Service during the past nine years. It is in most instances the median number of cases reported in the corresponding weeks of the preceding years. When the reports include several epidemics, or when for other reasons the median is unsatisfactory, the epidemic periods are excluded, and the estimated expectancy is the mean number of cases reported for the week during non-epidemic years.

If the reports have not been received for the full nine years, data are used for as many years as possible, but no year earlier than 1923 is included. In obtaining the estimated expectancy, the figures are smoothed when necessary to avoid abrupt deviation from the usual trend. For some of the diseases given in the table the available data were not sufficient to make it practicable to compute the estimated expectancy.

Division, State, and city	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases reported	Mumps, cases reported	Pneumonia, deaths reported
		Cases, estimated expectancy	Cases reported	Cases reported	Deaths reported			
NEW ENGLAND								
Maine:								
Portland	3	0	0		0	4	1	1
New Hampshire:								
Concord	0	0	0		0	3	0	1
Manchester	0	0	0		0	0	0	1
Nashua	0	0	0		0	0	2	0

City reports for week ended May 28, 1932—Continued

Division, State, and city	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases re- ported	Mumps, cases re- ported	Pneu- monia, deaths reported
		Cases, estimated expect- ancy	Cases reported	Cases reported	Deaths reported			
NEW ENGLAND—CON.								
Vermont:								
Barre.....	0	0	1	-----	0	0	0	0
Burlington.....	0	0	0	-----	0	0	2	0
Massachusetts:								
Boston.....	46	26	19	2	0	200	93	26
Fall River.....	6	2	1	-----	0	53	2	3
Springfield.....	17	2	0	-----	0	222	11	0
Worcester.....	18	2	0	-----	0	32	19	3
Rhode Island:								
Pawtucket.....	0	1	0	-----	0	0	0	0
Providence.....	5	5	2	-----	0	26	3	4
Connecticut:								
Bridgeport.....	2	4	0	-----	0	27	0	2
Hartford.....	5	3	0	2	0	4	10	2
New Haven.....	25	1	0	-----	0	3	27	0
MIDDLE ATLANTIC								
New York:								
Buffalo.....	23	8	3	-----	1	48	1	11
New York.....	368	229	86	13	3	632	252	138
Rochester.....	11	3	0	-----	0	22	6	0
Syracuse.....	16	1	0	-----	0	303	9	4
New Jersey:								
Camden.....	5	5	0	-----	0	1	0	0
Newark.....	71	13	1	1	1	105	241	10
Trenton.....	8	2	3	-----	0	3	2	2
Pennsylvania:								
Philadelphia.....	128	56	2	5	3	8	78	19
Pittsburgh.....	61	15	3	-----	2	133	27	30
Reading.....	2	0	0	-----	0	5	0	0
EAST NORTH CENTRAL								
Ohio:								
Cincinnati.....	9	4	1	-----	2	1	0	7
Cleveland.....	79	21	2	7	1	647	68	10
Columbus.....	7	4	6	-----	0	62	1	5
Toledo.....	30	3	0	2	2	103	0	4
Indiana:								
Fort Wayne.....	2	1	8	-----	0	3	0	3
Indianapolis.....	45	2	2	-----	0	18	137	13
South Bend.....	13	0	1	-----	0	2	0	2
Terre Haute.....	2	0	0	-----	0	74	0	2
Illinois:								
Chicago.....	147	77	29	1	5	478	14	29
Springfield.....	6	0	0	-----	0	0	4	2
Michigan:								
Detroit.....	101	38	10	3	0	1,211	64	28
Flint.....	9	1	0	11	1	95	24	0
Grand Rapids.....	5	0	0	-----	0	31	13	2
Wisconsin:								
Kenosha.....	5	0	1	-----	0	270	0	0
Madison.....	4	0	0	-----	-----	1	1	-----
Milwaukee.....	101	11	1	1	1	952	22	7
Racine.....	12	0	0	-----	0	150	34	0
Superior.....	0	0	0	-----	0	0	5	1
WEST NORTH CENTRAL								
Minnesota:								
Duluth.....	13	0	0	-----	0	0	2	1
Minneapolis.....	20	10	3	-----	0	19	71	7
St. Paul.....	25	7	0	-----	0	4	28	3
Iowa:								
Davenport.....	0	0	0	-----	-----	0	0	-----
Des Moines.....	2	0	4	-----	-----	0	0	-----
Sioux City.....	6	1	0	-----	-----	1	3	-----
Waterloo.....	6	0	0	-----	-----	0	3	-----
Missouri:								
Kansas City.....	16	2	3	-----	0	12	28	8
St. Joseph.....	3	0	2	-----	0	0	0	3
St. Louis.....	32	30	13	1	-----	8	9	7

City reports for week ended May 28, 1932—Continued

Division, State, and city	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases re- ported	Mumps, cases re- ported	Pneu- monia, deaths reported
		Cases, estimated expect- ancy	Cases reported	Cases reported	Deaths reported			
WEST NORTH CENTRAL—continued								
North Dakota:								
Fargo.....	16	0	0		0	13	0	1
Grand Forks.....	0	0	0			50	0	
South Dakota:								
Aberdeen.....	3	0	0			3	0	
Nebraska:								
Omaha.....	9	2	12		0	1	2	2
Kansas:								
Topeka.....	52	0	1		1	21	4	1
Wichita.....	4	1	1		0	14	5	3
SOUTH ATLANTIC								
Delaware:								
Wilmington.....	1	1	0		0	1	2	1
Maryland:								
Baltimore.....	119	17	3	2	0	5	135	21
Cumberland.....	1	0	1		0	15	0	0
Frederick.....	0	0	1		0	1	0	0
District of Columbia:								
Washington.....	40	9	3	3	2	18	0	11
Virginia:								
Lynchburg.....	3	0	0		0	1	0	0
Norfolk.....	1	0	0		0	27	2	2
Richmond.....	2	1	1		1	0	0	3
Roanoke.....	1	0	0		0	0	0	1
West Virginia:								
Charleston.....	0	0	1		0	15	0	1
Huntington.....	0	0	0		0	6	0	0
Wheeling.....	2	0	0		0	37	0	2
North Carolina:								
Raleigh.....	1	0	0		0	1	0	0
Wilmington.....	0	0	0		0	0	0	0
Winston-Salem.....	7	0	0		0	83	2	2
South Carolina:								
Charleston.....	1	0	0	7	1	0	0	2
Columbia.....	4	0	0		0	63	0	5
Greenville.....	0	0	0		0	19	0	0
Georgia:								
Atlanta.....	7	2	2	10	2	2	0	7
Brunswick.....	0	0	0		0	0	0	1
Savannah.....	2	1	0	31	0	8	0	1
Florida:								
Miami.....	0	1	1		0	0	0	2
Tampa.....	2	0	1	1	1	0	1	0
EAST SOUTH CENTRAL								
Kentucky:								
Covington.....		0						
Lexington.....	2		0		0	1	1	1
Tennessee:								
Memphis.....	3	1	0		0		0	2
Nashville.....	0	0	1		0	0	0	4
Alabama:								
Birmingham.....	4	1	0		2	1	7	2
Mobile.....	0	1	0		0	1	0	1
Montgomery.....	1	0	0			0	0	
WEST SOUTH CENTRAL								
Arkansas:								
Fort Smith.....	0	0	0			0	0	
Little Rock.....	0	0	1		0	0	0	0
Louisiana:								
New Orleans.....	0	8	25	1	0	0	0	5
Shreveport.....	0	0	0		0	6	10	0
Oklahoma:								
Oklahoma City.....	0	1	1	2	1	5	0	2
Texas:								
Dallas.....	3	3	8		0		0	5
Fort Worth.....	4	1	2		0	1	0	0
Galveston.....	0	0	1		0	0	0	1
Houston.....	0	3	5		0	5	0	5
San Antonio.....	0	1	0	1	1	1	0	4

City reports for week ended May 28, 1932—Continued

Division, State, and city	Chicken pox, cases reported	Diphtheria		Influenza		Measles, cases re- ported	Mumps, cases re- ported	Pneu- monia, deaths reported
		Cases, estimated expect- ancy	Cases reported	Cases reported	Deaths reported			
MOUNTAIN								
Montana:								
Billings.....	0	0	0	-----	0	0	0	0
Great Falls.....	0	0	0	-----	0	1	0	0
Helena.....	5	0	0	-----	0	0	0	0
Missoula.....	1	0	0	-----	0	0	0	0
Idaho:								
Boise.....	0	0	1	-----	0	2	0	1
Colorado:								
Denver.....	37	6	3	-----	0	60	50	9
Pueblo.....	16	0	0	-----	0	0	0	0
New Mexico:								
Albuquerque.....	6	0	0	-----	0	17	5	0
Arizona:								
Phoenix.....	2	0	0	-----	0	0	0	0
Utah:								
Salt Lake City.....	65	2	0	-----	0	0	28	2
Nevada:								
Reno.....	-----	0	-----	-----	-----	-----	-----	-----
PACIFIC								
Washington:								
Seattle.....	13	2	7	-----	-----	55	6	-----
Spokane.....	19	3	0	-----	-----	22	0	-----
Tacoma.....	2	1	2	-----	0	80	0	1
Oregon:								
Portland.....	0	4	1	2	0	137	3	0
Salem.....	1	0	0	-----	0	2	4	0
California:								
Los Angeles.....	140	26	25	27	0	17	17	10
Sacramento.....	43	3	0	-----	0	5	1	2
San Francisco.....	67	11	1	3	2	214	4	9

Division, State, and city	Scarlet fever		Smallpox			Tuber- culosis, deaths re-ported	Typhoid fever			Whoop- ing cough, cases re-ported	Deaths, all causes
	Cases, esti- mated expec- tancy	Cases re- ported	Cases, esti- mated expec- tancy	Cases re- ported	Deaths re- ported		Cases, esti- mated expec- tancy	Cases re- ported	Deaths re- ported		
NEW ENGLAND											
Maine:											
Portland.....	3	2	0	0	0	1	0	0	0	5	25
New Hampshire:											
Concord.....	0	4	0	0	0	1	0	0	0	0	17
Manchester.....	0	0	0	0	0	2	0	0	0	0	21
Nashua.....	1	3	0	0	0	0	0	0	0	0	0
Vermont:											
Barre.....	0	0	0	0	0	0	0	0	0	0	3
Burlington.....	0	0	0	0	0	0	0	0	0	1	11
Massachusetts:											
Boston.....	70	138	0	0	0	22	2	0	0	36	237
Fall River.....	4	16	0	0	0	1	0	0	0	0	22
Springfield.....	9	6	0	0	0	2	0	0	0	5	33
Worcester.....	10	35	0	0	0	1	0	0	0	0	41
Rhode Island:											
Pawtucket.....	3	0	0	0	0	0	0	0	0	0	14
Providence.....	11	36	0	0	0	4	1	0	0	7	55
Connecticut:											
Bridgeport.....	7	6	0	0	0	3	0	0	0	0	38
Hartford.....	4	7	0	0	0	0	1	0	0	2	30
New Haven.....	4	19	0	0	0	2	0	0	0	14	36
MIDDLE ATLANTIC											
New York:											
Buffalo.....	24	71	0	1	0	12	0	1	0	15	153
New York.....	253	776	0	0	0	102	9	6	0	163	1,453
Rochester.....	10	58	0	0	0	0	1	1	0	7	66
Syracuse.....	10	19	0	0	0	1	0	0	0	71	47

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City reports for week ended May 28, 1932—Continued

Division, State, and city	Scarlet fever		Smallpox			Tuber- culo- sis, deaths re- ported	Typhoid fever			Whoop- ing cough, cases re- ported	Deaths, all causes
	Cases, esti- mated expect- ancy	Cases re- ported	Cases, esti- mated expect- ancy	Cases re- ported	Deaths re- ported		Cases, esti- mated expect- ancy	Cases re- ported	Deaths re- ported		
MIDDLE ATLANTIC—CON.											
New Jersey:											
Camden.....	5	43	0	0	0	2	1	0	0	0	39
Newark.....	25	34	0	0	0	4	0	0	0	20	83
Trenton.....	4	6	0	0	0	3	0	0	0	7	38
Pennsylvania:											
Philadelphia.....	91	182	0	0	0	22	2	0	0	105	458
Pittsburgh.....	30	69	0	0	0	7	0	0	0	27	160
Reading.....	4	21	0	0	0	1	0	0	0	12	28
EAST NORTH CENTRAL											
Ohio:											
Cincinnati.....	18	39	2	0	0	12	0	0	0	3	115
Cleveland.....	44	113	0	0	0	11	1	1	0	97	187
Columbus.....	7	6	1	0	0	3	0	0	0	7	83
Toledo.....	11	10	0	0	0	5	0	0	0	40	68
Indiana:											
Fort Wayne.....	4	7	2	0	0	2	0	0	0	5	28
Indianapolis.....	15	3	8	0	0	5	0	1	1	48	11
South Bend.....	5	4	1	0	0	1	0	0	0	6	15
Terre Haute.....	1	0	1	0	0	0	0	0	0	0	0
Illinois:											
Chicago.....	120	204	2	0	0	45	3	0	0	77	644
Springfield.....	4	6	0	0	0	1	0	8	0	0	11
Michigan:											
Detroit.....	112	294	0	0	0	31	1	3	0	187	274
Flint.....	12	9	1	0	0	0	0	0	0	14	20
Grand Rapids.....	10	5	0	0	0	1	0	0	0	5	23
Wisconsin:											
Kenosha.....	1	2	0	0	0	0	0	0	0	1	9
Madison.....	3	1	0	0	0	0	0	0	0	29	90
Milwaukee.....	29	26	0	0	0	3	1	1	0	92	10
Racine.....	5	0	0	0	0	0	0	0	0	0	7
Superior.....	3	0	0	0	0	0	0	0	0	3	0
WEST NORTH CENTRAL											
Minnesota:											
Duluth.....	7	1	0	0	0	0	0	0	0	0	21
Minneapolis.....	28	41	0	1	0	4	0	1	0	26	77
St. Paul.....	17	16	0	0	0	0	0	8	0	28	42
Iowa:											
Davenport.....	1	6	5	1	0	0	0	0	0	0	25
Des Moines.....	5	6	2	0	0	0	0	0	0	0	0
Sioux City.....	1	1	0	4	0	0	0	0	0	1	0
Waterloo.....	3	0	0	0	0	0	0	0	0	0	0
Missouri:											
Kansas City.....	13	17	0	0	0	6	1	0	0	17	96
St. Joseph.....	2	0	0	0	0	0	0	0	0	0	16
St. Louis.....	59	12	2	0	0	8	1	0	0	20	213
North Dakota:											
Fargo.....	2	0	0	0	0	1	0	0	0	0	9
Grand Forks.....	0	0	0	0	0	0	0	0	0	0	0
South Dakota:											
Aberdeen.....	1	0	0	0	0	0	0	0	0	1	0
Nebraska:											
Omaha.....	4	3	5	7	0	1	0	0	0	2	35
Kansas:											
Topeka.....	3	1	1	0	0	0	0	0	0	75	14
Wichita.....	2	0	0	0	0	0	0	0	0	3	31
SOUTH ATLANTIC											
Delaware:											
Wilmington.....	3	3	0	0	0	0	0	0	0	0	24
Maryland:											
Baltimore.....	37	48	0	0	0	16	2	1	0	88	199
Cumberland.....	0	1	0	0	0	0	0	1	0	0	14
Frederick.....	0	1	0	0	0	0	0	0	0	0	3
Dist. of Columbia:											
Washington.....	21	17	0	0	0	10	1	0	0	20	156

City reports for week ended May 28, 1932—Continued

Division, State, and city	Scarlet fever		Smallpox			Tuber- culo- sis, deaths re- ported	Typhoid fever			Whoop- ing cough, cases re- ported	Deaths, all causes
	Cases, esti- mated expect- ancy	Cases re- ported	Cases, esti- mated expect- ancy	Cases re- ported	Deaths re- ported		Cases, esti- mated expect- ancy	Cases re- ported	Deaths re- ported		
SOUTH ATLANTIC— continued											
Virginia:											
Lynchburg.....	0	4	0	0	0	1	0	0	0	30	7
Norfolk.....	1	2	0	0	0	2	1	0	0	14	25
Richmond.....	3	1	0	0	0	5	0	0	0	15	45
Roanoke.....	0	7	0	0	0	3	0	0	0	9	21
West Virginia:											
Charleston.....	0	1	1	0	0	0	0	0	0	1	7
Huntington.....	0	0	0	0	0	0	0	0	0	0	0
Wheeling.....	1	3	0	0	0	1	0	0	0	5	16
North Carolina:											
Raleigh.....	0	0	0	0	0	1	0	0	0	2	16
Wilmington.....	0	0	0	0	0	0	0	0	0	18	8
Winston-Salem.....	0	8	0	1	0	3	0	0	0	34	17
South Carolina:											
Charleston.....	0	0	0	0	0	5	0	0	0	0	20
Columbia.....	0	0	0	0	0	0	1	0	0	1	37
Greenville.....	0	0	0	0	0	0	0	0	0	1	0
Georgia:											
Atlanta.....	5	2	3	0	0	7	1	1	1	7	70
Brunswick.....	0	0	0	0	0	0	0	2	1	0	7
Savannah.....	0	2	0	0	0	1	1	3	1	4	16
Florida:											
Miami.....	0	0	0	0	0	0	0	0	0	1	16
Tampa.....	0	1	0	0	0	0	0	1	0	0	19
EAST SOUTH CENTRAL											
Kentucky:											
Covington.....	1	0	1	0	0	0	0	0	0	3	14
Lexington.....	0	0	0	0	0	0	0	0	0	0	0
Tennessee:											
Memphis.....	7	5	0	2	0	3	2	1	1	19	68
Nashville.....	2	2	1	0	0	5	0	0	0	9	46
Alabama:											
Birmingham.....	1	1	1	0	0	1	0	3	0	11	50
Mobile.....	0	0	0	4	0	1	0	1	0	0	11
Montgomery.....	0	1	0	0	0	0	0	0	0	0	0
WEST SOUTH CEN- TRAL											
Arkansas:											
Fort Smith.....	0	1	0	0	0	0	0	0	0	0	0
Little Rock.....	1	0	1	0	0	2	0	0	0	1	2
Louisiana:											
New Orleans.....	8	0	0	0	0	11	2	1	0	1	134
Shreveport.....	1	0	0	0	0	2	0	0	0	7	30
Oklahoma:											
Oklahoma City.....	2	3	2	1	0	3	1	1	1	0	44
Texas:											
Dallas.....	3	5	1	0	0	5	1	0	0	10	50
Fort Worth.....	2	3	3	1	0	3	0	0	0	0	27
Galveston.....	0	0	0	0	0	1	0	0	0	0	15
Houston.....	3	1	2	0	0	5	0	0	0	0	66
San Antonio.....	0	0	0	0	0	2	0	0	0	0	71
MOUNTAIN											
Montana:											
Billings.....	0	0	0	0	0	0	0	0	0	0	5
Great Falls.....	1	2	0	0	0	0	0	0	0	2	4
Helena.....	0	0	0	0	0	0	0	0	0	0	5
Missoula.....	0	1	0	0	0	0	0	0	0	0	0
Idaho:											
Boise.....	0	0	0	0	0	0	0	0	0	0	8
Colorado:											
Denver.....	11	14	0	0	0	10	0	1	0	24	86
Pueblo.....	0	1	0	0	0	0	1	0	0	4	7
New Mexico:											
Albuquerque.....	0	1	0	0	0	5	0	0	0	4	10

City reports for week ended May 28, 1932—Continued

Division, State, and city	Scarlet fever		Smallpox			Tuber- culo- sis, deaths re- ported	Typhoid fever			Whoop- ing cough, cases re- ported	Deaths, all causes
	Cases, esti- mated expec- tancy	Cases re- ported	Cases, esti- mated expec- tancy	Cases re- ported	Deaths re- ported		Cases, esti- mated expec- tancy	Cases re- ported	Deaths re- ported		
MOUNTAIN—CON.											
Arizona:											
Phoenix.....	0	0	1	0	0	2	0	0	0	0	-----
Utah:											
Salt Lake City.....	3	3	1	0	0	0	0	0	0	5	29
Nevada:											
Reno.....	0	-----	0	-----	-----	-----	0	-----	-----	-----	-----
PACIFIC											
Washington:											
Seattle.....	8	9	1	2	-----	-----	0	3	-----	2	-----
Spokane.....	4	1	6	0	-----	-----	0	0	-----	0	-----
Tacoma.....	4	0	3	0	0	1	0	0	0	0	33
Oregon:											
Portland.....	3	2	8	2	0	1	0	0	0	5	57
Salem.....	1	1	0	0	0	0	0	0	0	0	-----
California:											
Los Angeles.....	28	56	5	8	0	15	1	2	0	80	293
Sacramento.....	2	3	1	0	0	4	1	3	0	0	-----
San Francisco.....	20	7	0	1	0	14	0	2	0	16	175

Division, State, and city	Meningococcus meningitis		Lethargic encephalitis		Pellagra		Polio-myelitis (infantile paralysis)			
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases, estimated expectancy	Cases	Deaths	
NEW ENGLAND										
Massachusetts:										
Boston.....	1	1	0	0	0	0	1	0	0	0
Worcester.....	0	0	0	0	1	0	0	0	0	0
Rhode Island:										
Providence.....	0	0	0	0	0	0	0	1	0	0
MIDDLE ATLANTIC										
New York:										
New York.....	4	0	0	0	0	0	1	2	0	0
Pennsylvania:										
Philadelphia.....	4	1	0	0	0	0	0	0	0	0
Pittsburgh.....	0	1	0	0	0	0	0	0	0	0
EAST NORTH CENTRAL										
Ohio:										
Toledo.....	1	1	0	0	0	0	0	0	0	0
Indiana:										
Indianapolis.....	2	0	0	0	0	0	0	0	0	0
Illinois:										
Chicago.....	2	1	0	0	0	0	0	0	0	0
Michigan:										
Detroit.....	1	2	0	0	0	0	0	0	0	1
Flint.....	0	1	0	0	0	0	0	0	0	0
WEST NORTH CENTRAL										
Minnesota:										
St. Paul.....	1	0	0	1	0	0	0	0	0	0

City reports for week ended May 28, 1932—Continued

Division, State, and city	Meningo- coccus meningitis		Lethargic en- cephalitis		Pellagra		Polio-myelitis (Infan- tile paralysis)		
	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases, esti- mated expect- ancy	Cases	Deaths
SOUTH ATLANTIC									
District of Columbia:									
Washington.....	0	1	0	0	0	0	0	0	0
North Carolina:									
Raleigh.....	0	1	0	0	0	0	0	0	0
Winston-Salem.....	0	0	0	0	0	1	0	0	0
South Carolina:									
Charleston.....	0	0	0	0	6	1	0	0	0
Columbia.....	0	0	0	0	0	1	0	0	0
Georgia: ¹									
Atlanta.....	1	0	0	0	2	0	0	0	0
EAST SOUTH CENTRAL									
Alabama:									
Birmingham.....	0	0	0	0	0	1	0	0	0
WEST SOUTH CENTRAL									
Louisiana:									
New Orleans.....	0	0	0	0	2	1	0	0	0
Texas:									
Galveston.....	0	1	0	0	0	0	0	0	0
Houston.....	0	1	0	0	0	0	0	0	0
San Antonio.....	0	0	0	0	0	0	0	2	1
MOUNTAIN									
Montana:									
Great Falls.....	0	0	0	0	0	0	0	1	0
Idaho:									
Boise.....	0	0	0	1	0	0	0	0	0
Utah:									
Salt Lake City.....	1	1	0	0	0	0	0	0	0
PACIFIC									
Oregon:									
Portland.....	1	0	0	0	0	0	0	0	0
California:									
San Francisco.....	0	0	1	0	0	0	0	0	0

¹ Typhus fever, 1 case in Savannah, Ga.

The following table gives the rates per 100,000 population for 98 cities for the 5-week period ended May 28, 1932, compared with those for a like period ended May 30, 1931. The population figures used in computing the rates are estimated mid-year populations for 1931 and 1932, respectively, derived from the 1930 census. The 98 cities reporting cases have an estimated aggregate population of more than 34,000,000. The 91 cities reporting deaths have more than 32,400,000 estimated population.

Summary of weekly reports from cities, April 24 to May 28, 1932—Annual rates per 100,000 population, compared with rates for the corresponding period of 1931¹

DIPHTHERIA CASE RATES

	Week ended—									
	Apr. 30, 1932	May 2, 1931	May 7, 1932	May 9, 1931	May 14, 1932	May 16, 1931	May 21, 1932	May 23, 1931	May 28, 1932	May 30, 1931
98 cities.....	48	63	49	67	44	63	39	62	48	59
New England.....	21	36	34	38	48	38	41	48	55	60
Middle Atlantic.....	54	61	48	61	42	58	14	63	43	58
East North Central.....	33	84	33	82	32	72	36	67	36	81
West North Central.....	51	57	53	71	55	71	83	75	66	54
South Atlantic.....	43	69	45	63	29	65	33	38	25	42
East South Central.....	19	6	46	41	40	18	12	12	6	18
West South Central.....	79	68	89	108	92	81	96	81	135	54
Mountain.....	34	26	9	27	26	61	82	61	36	52
Pacific.....	89	53	97	61	69	74	86	73	67	87

MEASLES CASE RATES

98 cities.....	1,141	1,250	1,226	1,305	1,157	1,403	1,137	1,373	1,022	1,115
New England.....	1,318	964	1,002	1,063	1,196	1,166	951	1,190	1,376	935
Middle Atlantic.....	475	1,411	478	1,434	487	1,456	534	1,479	557	1,188
East North Central.....	2,521	896	3,317	1,101	2,962	1,311	2,908	1,457	2,379	1,302
West North Central.....	411	777	243	1,016	254	1,397	188	1,098	176	641
South Atlantic.....	663	3,877	429	3,559	569	3,371	498	2,845	490	2,093
East South Central.....	6	1,439	0	1,275	12	1,245	6	1,245	12	1,057
West South Central.....	43	156	40	152	30	166	46	271	40	294
Mountain.....	1,250	661	810	885	1,069	531	844	618	562	461
Pacific.....	866	506	883	502	763	555	664	457	748	492

SCARLET FEVER CASE RATES

98 cities.....	494	372	444	390	437	389	384	368	397	306
New England.....	971	582	678	630	647	666	693	536	645	351
Middle Atlantic.....	774	409	706	448	709	439	570	442	566	305
East North Central.....	436	402	397	438	385	453	354	412	428	437
West North Central.....	222	480	182	440	195	383	188	341	174	291
South Atlantic.....	359	273	265	277	243	243	208	241	194	239
East South Central.....	50	411	52	253	17	341	17	394	56	300
West South Central.....	43	132	43	105	23	106	49	85	53	51
Mountain.....	190	191	155	170	147	157	148	270	187	165
Pacific.....	129	94	145	106	135	123	162	88	145	110

SMALLPOX CASE RATES

98 cities.....	4	23	8	15	5	17	7	16	5	15
New England.....	0	0	0	0	0	0	0	0	0	0
Middle Atlantic.....	0	1	0	3	0	1	0	4	0	1
East North Central.....	3	10	0	6	4	23	3	15	0	11
West North Central.....	8	115	13	78	21	75	23	67	23	88
South Atlantic.....	0	6	0	8	0	6	0	6	2	24
East South Central.....	62	59	64	41	17	12	35	41	37	6
West South Central.....	0	102	7	64	7	41	20	47	0	37
Mountain.....	0	0	138	9	17	17	61	9	0	26
Pacific.....	15	51	25	12	11	25	17	12	21	12

See footnotes at end of table.

Summary of weekly reports from cities, April 24 to May 28, 1932—Annual rates per 100,000 population, compared with rates for the corresponding period of 1931—Continued

TYPHOID FEVER CASE RATES

	Week ended—									
	Apr. 30, 1932	May 2, 1931	May 7, 1932	May 9, 1931	May 14, 1932	May 16, 1931	May 21, 1932	May 23, 1931	May 28, 1932	May 30, 1931
98 cities.....	7	6	5	5	6	5	8	6	8	7
New England.....	12	7	0	5	12	5	10	2	0	2
Middle Atlantic.....	5	7	6	5	4	5	5	5	4	8
East North Central.....	3	4	3	2	2	2	4	5	8	2
West North Central.....	4	4	0	2	9	6	9	10	2	4
South Atlantic.....	18	14	10	8	8	12	25	12	18	22
East South Central.....	12	12	17	6	0	18	6	18	31	12
West South Central.....	26	0	10	7	16	7	10	7	3	7
Mountain.....	0	0	0	0	9	0	9	0	9	17
Pacific.....	6	6	0	8	4	0	10	8	19	3

INFLUENZA DEATH RATES

91 cities.....	14	11	10	12	9	8	7	7	5	7
New England.....	9	7	2	5	7	2	0	5	0	10
Middle Atlantic.....	8	12	8	11	9	7	7	5	4	3
East North Central.....	13	5	5	11	8	5	5	5	6	5
West North Central.....	15	12	12	6	6	9	20	3	3	9
South Atlantic.....	27	20	24	22	8	16	6	4	14	18
East South Central.....	14	19	50	51	44	51	8	19	14	19
West South Central.....	40	38	10	14	7	7	24	28	3	14
Mountain.....	43	26	34	27	9	9	0	26	10	17
Pacific.....	7	2	5	7	7	7	0	0	5	8

PNEUMONIA DEATH RATES

91 cities.....	104	122	108	117	103	102	98	95	86	101
New England.....	187	154	129	130	98	113	125	72	101	111
Middle Atlantic.....	115	141	120	144	130	121	109	121	97	100
East North Central.....	78	76	91	87	91	73	86	68	68	75
West North Central.....	145	180	70	121	102	109	105	97	105	133
South Atlantic.....	141	180	131	131	120	127	102	111	116	133
East South Central.....	150	121	75	121	63	127	75	121	61	185
West South Central.....	87	152	128	114	57	114	77	97	71	128
Mountain.....	95	61	86	98	69	78	131	70	107	70
Pacific.....	30	46	67	70	53	55	46	55	51	43

¹ The figures given in this table are rates per 100,000 population, annual basis, and not the number of cases reported. Populations used are estimated as of July 1, 1932, and 1931, respectively.

² Covington, Ky., not included.

³ Billings, Mont., not included.

⁴ Covington, Ky., and Reno, Nev., not included.

⁵ Reno, Nev., not included.

FOREIGN AND INSULAR

CANADA

Provinces—Communicable diseases—Week ended May 21, 1932.—Cases of certain communicable diseases reported for the week ended May 21, 1932, by the Department of Pensions and National Health of Canada are given in the table below. Provinces not included in the table did not report any case of any disease included in the table.

Disease	Quebec	Ontario	Manitoba	Saskatchewan	Total
Cerebrospinal fever.....		2			2
Influenza.....		1			1
Smallpox.....				3	3
Typhoid fever.....	16	6	2	1	25

Quebec Province—Communicable diseases—Week ended May 21, 1932.—The Bureau of Health of the Province of Quebec, Canada, reports cases of certain communicable diseases for the week ended May 21, 1932, as follows:

Disease	Cases	Disease	Cases
Chicken pox.....	47	Scarlet fever.....	92
Diphtheria.....	19	Tuberculosis.....	58
Erysipelas.....	7	Typhoid fever.....	16
German measles.....	19	Whooping cough.....	15
Measles.....	187		

CUBA

Habana—Communicable diseases—Four weeks ended May 21, 1932.—During the four weeks ended May 21, 1932, certain communicable diseases were reported in Habana, Cuba, as follows:

Disease	Cases	Deaths	Disease	Cases	Deaths
Cerebrospinal meningitis.....	1	1	Measles.....	7	1
Chicken pox.....	1		Scarlet fever.....	4	
Diphtheria.....	12	3	Tuberculosis.....	33	7
Malaria.....	8		Typhoid fever.....	4	3

JAMAICA

Communicable diseases—Four weeks ended May 21, 1932.—During the four weeks ended May 21, 1932, cases of certain communicable diseases were reported in Kingston, Jamaica, and in the island of Jamaica, outside of Kingston, as follows:

Disease	Kingston	Other localities	Disease	Kingston	Other localities
Cerebrospinal meningitis.....	1		Lethargic encephalitis.....		1
Chicken pox.....	15	62	Paratyphoid fever.....		1
Diphtheria.....		1	Puerperal fever.....		2
Dysentery.....	3	3	Tuberculosis.....	42	83
Erysipelas.....		1	Typhoid fever.....	22	60
Leprosy.....		3			

SIERRA LEONE

Smallpox.—During the period from March 6 to April 1, 1932, 159 cases of smallpox, with 5 deaths, were reported in Sierra Leone. One hundred and one cases, with 1 death, were reported from April 3 to 16. In February, 9 cases of smallpox were reported, 3 of which occurred in Freetown. The yearly number of cases of smallpox reported had not exceeded 20 since 1926 until the present outbreak. Twelve cases were reported in 1929, 1 imported case in 1930, and 7 cases in 1931.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

PLAGUE!

[IC indicates cases; D, deaths; P, present]

[illegible]

SMALLPOX

Place	Week ended—																	
	Nov. 15- Dec. 12, 1931	Dec. 13- 10- Jan. 6, 1932	Jan. 10- Feb. 6, 1932	February, 1932			March, 1932			April, 1932			May, 1932					
				13	20	27	6	12	19	26	3	9	16	23	30	7	14	21
Aden.....			2															
Algeria.....																		
Algiers.....		1																
Constantine Department.....																		
Philippeville.....																	1	
Southern Territories.....																		
Brazil:																		
Porto Alegre (alastrim).....	51	35	34	12	3	4			3	1	1	2	1					
Rio de Janeiro.....	1	2																
Santos.....		1																
British East Africa: Tanganyika.....	2	55	24	4	1													
British South Africa:		4	7															
Northern Rhodesia.....		7	5															
Southern Rhodesia.....		1																
Canada:																		
Alberta.....	3	11																
British Columbia.....	2	15	8	10	4	3	7											
Manitoba.....	3	10																
Nova Scotia.....					1													
Ontario.....	11	14	6	4	15	1	1											1
North Bay.....																		
Toronto.....	1																	
Quebec.....		3	1															
Saskatchewan.....	34	11	35	23			6											
Chile: Tacopilla.....																		
China:																		
Amoy.....	46	218	183	85	34	30	22	15	12	6	10	7	6	4	1	3	1	3
Canton.....	14	26	79	11	14	12	7	8	7	3	10	4	3	2	1	2	2	6
Foochow.....	14	18	27	18	6	6	15	21	15	29	11	24	18	22	13	19	6	6
Hankow.....	P	P	P				P	1	P	3	P	P	P	P	1	1	1	
Hong Kong.....	6	1	1	7	19	19	6	12	7	17	9	12	13	21	6	7	7	7

122 cases of smallpox with 8 deaths were reported at Vancouver, British Columbia, from Jan. 1 to Feb. 18, 1932.

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

SMALLPOX—Continued

[C indicates cases; D, deaths; P, present]

Place	Week ended—															
	February, 1933				March, 1933				April, 1933				May, 1933			
	13	20	27	5	12	19	26	2	9	16	23	30	7	14	21	
China—Continued.																
Manchuria—Dairen.	1	1			3	1	7	5	7		1					
Nanking	2															
Shanghai—																
Foreigners only.	77	155	163	45	30	29	13	30	22	24	22	22	16	6	6	
Including natives.	31	41	62	8	15	17	6	7	7	10	8	10	6	6	6	
Sydney.	1	2	1	1	1	1	1	1	1	1						
Tientsin.																
Chosen (see table below).																
Colombia: Cali.								3	3			2				
Dahomey.									1							
Dutch East Indies: Batavia.																
Egypt:																
Alexandria.									1				1	1	1	
Cairo.																
Suez.				2	3	6	7	5	1	1	2		1			
France (see table below).																
Germany: Als-la-Chapelle.																
Gold Coast (see table below).																
Great Britain:																
England and Wales.																
London.																
London and Great Towns.																
Guatemala (see table below).																
	216	198	227	42	76	61	41	95	70	87	96	62	68	76	56	
	118	100	100	22	28	23	23	23	30	25	43	34	41	39	29	
	191	152	185	34	67	66	37	86	67	63	56	51	59	60	47	

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

SMALLPOX—Continued

[O indicates cases; D, deaths; P, present]

Week ended—

Place	Nov. 15- Dec. 12, 1931	Dec. 13, 1931- Jan. 6, 1932	Jan. 10- Feb. 6, 1932	February, 1932			March, 1932			April, 1932			May, 1932					
				13	20	27	5	12	19	26	2	9	16	23	30	7	14	21
Japan:																		
Kobe								1	1	1			1				1	7
Nagasaki																		
Osaka Prefecture																		
Osaka			35		55	3				1							1	
Taiwan	1	1	3															
Yokohama																		
Mexico (see also table below):																		
Chihuahua								1										
Durango																		
Jalisco (State)—Guadalajara	1	1	14		7	11	6	6	6			2	5	6	1	1		
Mexico City and surrounding territory	10	8																
Montevideo								1	2	1								
San Luis Potosi								1	1	1								
Torreon	7	2	2				2	2	2									
Morocco (see table below).	15		217			1	45											
Nigeria	1		120				2			270	1	480						
Palestine										24	1	80						
Panama: Chiriqui	3																	
Poland																		
Portugal:																		
Lisbon	91	105	96		21	8	17	7	10	14	8	6	8	11	4	6	10	8
Oporto	2	3	3		4	1	1	8	4	4	4	2	10	6		5	5	5
Salvador								20	10									
Siam																		
Sierra Leone																		
Sierra Leone Settlements	2																	
Sudan (Anglo-Egyptian)								3	1									
Sweden: Malmo								2	2	1								
								3	1		3			1				
								6										
								1										

Syria (see table below).

Tunisia: Tunis
Turkey (see also table below): Istanbul
Union of South Africa:
Cape Province
Orange Free State
Transvaal

On vessels:

Brazilian ship Jabotao at New Orleans
from Brazil
S. Tacoma at Manila from Shanghai
S. S. Cresting Court at Yokohama from
Shanghai
S. S. Bollington Court at Yokohama from
Shanghai
S. S. Victoria City at Brisbane from Shang-
hai
S. S. Bellaso at Mopile from Habana,
Cuba, and Haiti, England
S. S. Frauentel at Suva from Calcutta
S. S. Uwajima Maru at Osaka from Shang-
hai
S. S. President Jackson at Yokohama from
San Francisco via Honolulu
S. S. Hong Kheng at Singapore from Amoy,
via Swatow and Hong Kong
S. S. Hai Ning and S. S. Solviken at Hong
Kong
S. S. Merka at Aden from Colombo
S. S. Tjandane at Hong Kong from Shang-
hai and Amoy
S. S. Foatung at Shanghai
S. S. Rajula at Peking from Nagsapatam
S. S. MacGillivray at Suva from Hongkong
S. S. Taluni at Southampton from New
Zealand
S. S. Glenbank at Suva from Aden
S. S. Tuscania at Suva from Bombay

* 200 cases of smallpox were reported in Osaka Prefecture from Mar. 1 to May 24, 1932.

* From Mar. 6 to Apr. 16, 1932, 850 cases of smallpox with 6 deaths, were reported in Sierra Leone.

* A suspected case.

CHINA: LEADER: ENVIROY: LANCOS: MARE: 740: INTOM: LEADER: CHINA: 1

CHINA: LEADER: ENVIROY: LANCOS: MARE: 740: INTOM: LEADER: CHINA: 1

CHINA: LEADER: ENVIROY: LANCOS: MARE: 740: INTOM: LEADER: CHINA: 1

TYPHUS FEVER

Place	Nov. 15- Dec. 12, 1931	Dec. 13 10- Feb. 6, 1932	Week ended—													
			February, 1932				March, 1932				April, 1932				May, 1932	
			13		20		27		5		12		19		26	
			13	20	27	5	12	19	26	2	9	16	23	30	7	14
Algeria:																
Algiers.....	3	4														
Constantine.....		5														
Geryville.....	1	7														
Oran.....	4															
Bulgaria:																
.....	1	22	1	20	36	12	10	12	7							
.....	4	3	3	3	3	1	1	1								
Chile:																
Antofagasta.....		1														
Santiago.....	3															
China:																
Hankow.....		4														
Swatow (see table below).																
Colombia: Cali.....	D															
Czechoslovakia (see table below).																
Egypt:																
Alexandria.....		5														
Behdra.....		7														
Cairo.....	1	1														
Gharbieh.....																
Provinces.....																
Greece (see table below).																
Irish Free State:																
Donagall County—Stranorlar.....	2															
Limerick County—Limerick.....	1															
Wexford County—Lismore.....																
Latvia (see table below).																
Lithuania (see table below).																
Mexico:																
Guadalajara.....		1														
Mexico City, including municipalities in Federal District.....	22	11	25	7	8	3	2	3	3	2	3	2	3	3		
San Luis Potosi.....	4	6	9	1	4	3	4	2	2		1	2	2			
Morocco.....	17	9	6	7	10	19	14	3	21	5	9	7	3	15	3	7
	2	1					6	2	4	2	1	1				

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER—Continued

TYPHUS FEVER—Continued

[C indicates cases; D, deaths; P, present]

Week ended—

Place

February, 1932

March, 1932

April, 1932

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